

#3



OIPE

ENTERED

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/932,328

DATE: 04/23/2002

TIME: 15:37:11

Input Set : A:\50665-8009.US01-SEQLIST.TXT

Output Set: N:\CRF3\04232002\I932328.raw

```

4 <110> APPLICANT: Rodriguez, Raymond L.
5   Huang, Ning
7 <120> TITLE OF INVENTION: Plant Selectable Marker and Plant
8   Transformation Method
10 <130> FILE REFERENCE: 50665-8009.US01
12 <140> CURRENT APPLICATION NUMBER: US 09/932,328
C--> 13 <141> CURRENT FILING DATE: 2002-04-09
15 <150> PRIOR APPLICATION NUMBER: US 09/344,438
16 <151> PRIOR FILING DATE: 1999-06-25
18 <150> PRIOR APPLICATION NUMBER: US 60/090,896
19 <151> PRIOR FILING DATE: 1998-06-25
21 <160> NUMBER OF SEQ ID NOS: 14
23 <170> SOFTWARE: FastSEQ for Windows Version 4.0
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 955
27 <212> TYPE: DNA
28 <213> ORGANISM: Artificial Sequence
30 <220> FEATURE:
31 <223> OTHER INFORMATION: Gns9 promoter
33 <400> SEQUENCE: 1
34 ggatccaggg gacttaactt tagtccatat atttagacac taatttagag tattaaatat      60
35 aaattactta caaaactaat tcaataaatg aaagctaatt tgcgagacaa attttttatg      120
36 tttaattaat ccataattag agaatgttta ctgtagcatc acatagacta atcatggatt      180
37 aattaggctc aatagattcg tctcgtgaat tagtccaaga ttatggatgg attttattaa      240
38 tagtctacgt ttaatatatta taattagtgt tcaaacatcc gatgtgatag ggacttaaaa      300
39 agtttagtcc catctaaaca gggccacagt ctatgtggag catgttcacc gaacaccgat      360
40 aaatattgca aagcccagaa tgattttggt cccacatgcc agaaactacc acaccacat      420
41 ttcggttcac tttagctca ggaaaatcgt ccaacaattt cagctcagga aattaaatcg      480
42 tccgagaaaag gaacaagttt ggagccgttg ggatgagagc aattaggtca cgcttaacta      540
43 caagtacagt ctcattcatc gacattgatt agccagcaac taaccactta accccgagcc      600
44 agcccaagcg ctccgtacgt tcgttgggccc cccgcgcgc aggcggagac aacggtcatc      660
45 cggcgcgcgc gtcgctctcc ctgctcgca cggccgcacc acccacttcg ccacgaaccc      720
46 gacgcgagcg cgacgtgcat ctcccaacat ccccgccatt tcctccccac ccaaaaccaa      780
47 cccgcccgcg tgcggctggc ccaactttaca ggcctcacc tcccccaacc ataaatcccc      840
48 gcccttttcc cccctctccc accactcacc acgctctcca ctacacgact cgtcgcgcgc      900
49 ttgctctgct gcctctcgcg cccgcgcagc agtgagcagc agcaagagca gcaaa      955
51 <210> SEQ ID NO: 2
52 <211> LENGTH: 2300
53 <212> TYPE: DNA
54 <213> ORGANISM: Artificial Sequence
56 <220> FEATURE:
57 <223> OTHER INFORMATION: synthetic construct
59 <400> SEQUENCE: 2

```

RAW SEQUENCE LISTING

DATE: 04/23/2002

PATENT APPLICATION: US/09/932,328

TIME: 15:37:11

Input Set : A:\50665-8009.US01-SEQLIST.TXT

Output Set: N:\CRF3\04232002\I932328.raw

60	aacttttagtc	catatatatta	gacactaatt	tagagtatta	aatataaatt	acttacaaaa	60
61	ctaattcaat	aaatgaaagc	taatttgoga	gacaaatttt	ttatgtttta	ttaatccata	120
62	attagagaat	gtttactgta	gcacacata	gactaatcat	ggattaatta	ggctcaatag	180
63	attcgtctcg	tgaattagtc	caagattatg	gatggatttt	attaatagtc	tacgtttaat	240
64	atttataatt	agtgttcaaa	catccgatgt	gatagggaact	taaaaagttt	agtcccatct	300
65	aaacagggcc	acagtctatg	tggagcatgt	tcaccgaaca	ccgataaata	ttgcaaagcc	360
66	cagaatgatt	ttggtcccac	atgccagaaa	ctaccacacc	cacatttcgg	ttcattttca	420
67	gctcaggaaa	atcgtccaac	aatttcagct	caggaaatta	aatcgtccga	gaaaggaaca	480
68	agtttgagc	cgttgggatg	agagcaatta	ggtcacgctt	aactacaagt	acagtctcat	540
69	tcacgacat	tgattagcca	gcaactaacc	acttaacccc	gagccagccc	aagcgtccg	600
70	tacgttcgtt	gggccccgcg	cgcgcaggcg	gagacaacgg	tcacccggcg	cgcgggtcgc	660
71	tctccctcgc	tcgcacggcc	gcaccaccca	cttcgccacg	aaccgcgacg	gagcgcgacg	720
72	tgcatctccc	aacatccccg	ccatttcctc	cccacccaaa	accaacccgc	ccgcgtgcgg	780
73	ctggcccaact	ttacagcgcc	tcacctcccc	caaccataaa	tccccgccct	tttccccccc	840
74	tctccaccac	tcaccacgct	ctccactaca	cgactcgctg	ccgtcttgct	ctgctgcctc	900
75	tcgcgccgcg	gcagcagtg	gcagcagcaa	gagcagtgta	gaactagtgg	atccccgggg	960
76	gcaatgagat	atgaaaaagc	ctgaactcac	cgcgacgtct	gtcgagaagt	ttctgatcga	1020
77	aaagtccgac	agcgtctccg	acctgatgca	gctctcggag	ggcgaagaat	ctcgtgcttt	1080
78	cagcttcgat	gtaggagggc	gtggatatgt	cctgcgggta	aatagctgcg	ccgatggttt	1140
79	ctacaaaagt	cgttatgttt	atcggcacct	tgcctcggcc	gcgctcccga	ttccggaagt	1200
80	gcttgacatt	ggggaattca	gcgagagcct	gacctattgc	atctcccgcg	gtgcacaggg	1260
81	tgtcactgtg	caagacctgc	ctgaaaccga	actgcccgtc	gttctgcagc	cggctcgcga	1320
82	ggccatggat	gcgatcgtcg	cggccgatct	tagccagacg	agcgggttcg	gcccatcgcg	1380
83	accgcaagga	atcgggtcaat	acactacatg	gcgtgatctt	atatgcgcga	ttgctgatcc	1440
84	ccatgtgtat	cactggcaaa	ctgtgatgga	cgacaccgtc	agtgcgtccg	tcgcgcaggc	1500
85	tctcgatgag	ctgatgcttt	gggccgagga	ctgccccgaa	gtccggcacc	tcgtgcacgc	1560
86	ggatttcggc	tccaacaatg	tctgacgga	caatggccgc	ataacagcgg	tcattgactg	1620
87	gagcgaggcg	atgttcgggg	attcccaata	cgaggctcgc	aacatcttct	tctggaggcc	1680
88	gtggttggt	tgtatggagc	agcagacgcg	ctacttcgag	cggaggcatc	cggagcttgc	1740
89	aggatcgccg	cggctccggg	cgtatatgct	ccgcattggt	cttgaccaac	tctatcagag	1800
90	cttggttgac	ggcaatttcg	atgatgcagc	ttgggcgcag	ggtcgatgcg	acgcaatcgt	1860
91	ccgatccgga	gccggggactg	tcgggcgtac	acaaatcgcc	cgcagaagcg	cggccgtctg	1920
92	gaccgatggc	tgtgtagaag	tactcgccga	tagtggaaac	cgacgcccc	gcactcgtcc	1980
93	gggatcccc	ctacgcaacc	cgggagaaaa	tctgagcgca	cgatgacgag	actctcagtt	2040
94	tagcagattt	aaactgcgat	ttttaccctg	accggtatac	gtatatacgt	gccggcaacg	2100
95	agctgtatcc	gatccgaatt	acggatgcaa	ttgtccacga	agtacttctc	ccgtaataaa	2160
96	agtaggatca	gggacataca	tttgtatggt	tttacgaata	atgctatgca	ataaaatttg	2220
97	cactgcttaa	tgcttatgca	tttttgcttg	gttcgattgt	actggtgaat	tattgttact	2280
98	gttcttttta	cttctcgaat					2300
100	<210> SEQ ID NO: 3						
101	<211> LENGTH: 566						
102	<212> TYPE: DNA						
103	<213> ORGANISM: Artificial Sequence						
105	<220> FEATURE:						
106	<223> OTHER INFORMATION: synthetic construct						
108	<400> SEQUENCE: 3						
109	ccatggctag	cccagaaaga	agaccggccg	atattagacg	tgctacagaa	gctgatatgc	60
110	cagcagtttg	tacaattggt	aatcattata	tagaaacaag	taccgtaaac	tttcgaactg	120
111	aaactcaaga	acctcaagaa	tggactgatg	atttagtccg	tttacgagag	cgctatcctt	180

RAW SEQUENCE LISTING

DATE: 04/23/2002

PATENT APPLICATION: US/09/932,328

TIME: 15:37:11

Input Set : A:\50665-8009.US01-SEQLIST.TXT

Output Set: N:\CRF3\04232002\I932328.raw

```

112 ggcttgtagc agaagttgac ggagaagtag ctgggattgc atatgcgggc ccgtggaaag      240
113 cacgaaatgc atatgattgg acggctgaat caactgtgta cgtttcacca cgtcatcaac      300
114 ggacaggact tggttctact ttatataccc atctactgaa atctttggag gcacagggtt      360
115 ttaagagtgt ggtagctggt ataggattgc cgaatgatcc ctcggtacgc atgcacgaag      420
116 ctctcggata tgctcccaga ggtatgttga gggccgcagg tttcaaacad ggaaattggc      480
117 atgatgtagg tttttggcaa cttgacttct ctttaccagt acctcctcgt cccgttttac      540
118 ccgttactga gatctgatga tctaga                                566
120 <210> SEQ ID NO: 4
121 <211> LENGTH: 4704
122 <212> TYPE: DNA
123 <213> ORGANISM: Artificial Sequence
125 <220> FEATURE:
126 <223> OTHER INFORMATION: pAPI291 plasmid
128 <400> SEQUENCE: 4
129 cacctaaatt gtaagcgtta atattttggt aaaattcgcg ttaaattttt gttaaatcag      60
130 ctcatTTTTT aaccaatagg ccgaaatcgg caaaatccct tataaatcaa agaatagac      120
131 cgagataggg ttgagtgttg ttccagtttg gaacaagagt ccactattaa agaacgtgga      180
132 ctccaacgtc aaagggcgaa aaaccgtcta tcaggggcgt gggccactac gtgaaccatc      240
133 accctaatac agtttttttg ggtcgagggt ccgtaaagca ctaaatcgga accctaaagg      300
134 gagccccga ttttagagctt gacgggggaa gccggcgaaac gtggcgagaa aggaagggaa      360
135 gaaagcgaaa ggagcgggcg ctaggcgctt ggcaagtgtg gcggtcacgc tgcgcgtaac      420
136 caccacaccc ccgcgcgtta atgcgcgctt acagggcgcg tcccatcgc cattcaggct      480
137 gcgcaactgt tgggaagggc gatcgggtgc ggccctcttc ctattacgcc agctggcgaa      540
138 agggggatgt gctgcaaggc gattaagttg ggtaacgcca gggttttccc agtcacgacg      600
139 ttgtaaaacg acggccagtg aattgtaata cgactcata tagggcgaaat tggagctcaa      660
140 ctttagtcca tataattaga cactaattta gagtattaaa tataaattac ttacaaaact      720
141 aattcaataa atgaaagcta atttgcgaga caaatttttt atgtttaatt aatccataat      780
142 tagagaatgt ttactgtagc atcacataga ctaatcatgg attaattagg ctcaatagat      840
143 tcgtctcgtg aattagtcca agattatgga tggattttat taatagtcta cgtttaatat      900
144 ttataattag tgttcaaaca tccgatgtga tagggactta aaaagtttag tcccatctaa      960
145 acagggccac agtctatgtg gagcatgttc accgaacacc gataaatatt gcaaagccca      1020
146 gaatgatttt ggtcccatat gccagaaact accacaccca catttcggtt cattttcagc      1080
147 tcaggaaaat cgtccaacaa tttcagctca ggaaattaaa tcgtccgaga aaggaacaag      1140
148 ttgggagccg ttgggatgag agcaattagg tcacgcttaa ctacaagtac agtctcattc      1200
149 atcgacattg attagccagc aactaaccac ttaaccccgga gccagcccaa gcgctccgta      1260
150 cgttcggttg gccccgcgc cgcaggcgga gacaacggtc atccggcgcg ccggtcgcgc      1320
151 tccctcgtc gcacggcgcg accaccact tcgccacgaa cccgacgca gcgcgacgtg      1380
152 catctcccaa catccccgc atttctccc caccacaaac caaccgcgc gcgtgcggct      1440
153 ggcccacttt acagcgcttc acctcccca accataaate ccgcacctt tccccccctc      1500
154 tccaccactc accacgtctt ccactacacg actcgtcgcc gtcttgctct gctgcctctc      1560
155 gcgcccgcgc agcagtgagc agcagcaaga gcagtctagg gggatctacc atgagccag      1620
156 aacgacgccc ggccgacatc cgcggtgcca ccgaggcgga catgccggcg gtctgcacca      1680
157 tcgtcaacca ctacatcgag acaagcacgg tcaacttccg taccgagccg caggaaaccgc      1740
158 aggagtggac ggacgacctc gtccgtctgc gggagcgcta tccctggctc gtcgccgagg      1800
159 tggacggcga ggtcgccggc atgcctacg cgggcccctg gaaggcacgc aacgcctacg      1860
160 actggacggc cgagtcgacc gtgtacgtct ccccccgcca ccagcggacg ggactgggct      1920
161 ccacgtctta caccacctg ctgaagtccc tggaggcaca gggcttcaag agcgtggctc      1980
162 ctgtcatcgg gctgccccaa gacccgagcg tgcgcatgca cgaggcgctc ggatatgcc      2040
163 cccgcggcat gctgcgggcg gccggcttca agcacgggaa ctggcatgac gtgggtttct      2100

```

RAW SEQUENCE LISTING

DATE: 04/23/2002

PATENT APPLICATION: US/09/932,328

TIME: 15:37:11

Input Set : A:\50665-8009.US01-SEQLIST.TXT

Output Set: N:\CRF3\04232002\I932328.raw

```

164 ggcagctgga cttcagcctg ccggtaccgc cccgtccggt cctgcccgtc accgagatct 2160
165 gatgaccctc gagtctagac gcgtcccga tttcccgcgt cgttcaaaca ttgggaata 2220
166 aagtttctta agattgaatc ctgttgccgg tcttgcgatg attatcatat aatttctgtt 2280
167 gaattacggt aagcatgtaa taattaacat gtaatgcag acgttattta tgagatgggt 2340
168 ttttatgatt agagtccgc aattatacat ttaatacgcg atagaaaaca aaatatagcg 2400
169 cgcaaactag gataaattat cgcgcgcggt gtcatctatg ttactagatc gggaattcga 2460
170 tatcaagctt atcgataccg tcgacctcga gggggggccc ggtaccacgc tttgttccc 2520
171 tttagttagg gttaatttcg agcttgccgt aatcatggtc atagctgttt cctgtgtgaa 2580
172 attgttatcc gctcacaatt ccacacaaca tacgagccgg aagcataaag tgtaaagcct 2640
173 ggggtgccta atgagtgage taactcacat taattgcgtt gcgctcactg cccgctttcc 2700
174 agtcgggaaa cctgtcgtgc cagctgcatt aatgaatcgg ccaacgcgcg gggagaggcg 2760
175 gtttgcgat tgggcgctct tccgcttcc cgtcactga ctcgctgcgc tcggtcgttc 2820
176 ggctgcggcg agcggtatca gctcactcaa aggcggtaat acggttatcc acagaatcag 2880
177 gggataacgc aggaagaac atgtgagcaa aaggccagca aaaggccagg aaccgtaaaa 2940
178 aggcgcggtt gctggcgttt ttccatagcg tccgcccccc tgacgagcat cacaaaaatc 3000
179 gacgctcaag tcagaggtag cgaaacccga caggactata aagataccag gcgtttcccc 3060
180 ctggaagctc cctcgtgcgc tctcctgttc cgacctgcc gcttaccgga tacctgtccg 3120
181 cctttctccc ttcgggaagc gtggcgcttt ctcatagctc acgctgtagg tatctcagtt 3180
182 cggtgtaggt cgttcgtccc aagctgggct gtgtgcacga acccccgtt cagcccagcc 3240
183 cctgcgcctt atccggtaac tatcgtcttg agtccaaccc ggtaagacac gacttatcgc 3300
184 cactggcagc agccactggt aacaggatga gcagagcgag gtatgtaggc ggtgctacag 3360
185 agttcttgaa gtggtggcct aactacggct acactagaag gacagtattt ggtatctgcg 3420
186 ctctgctgaa gccagttacc ttcggaaaaa gagttgtag ctcttgatcc ggcaaacaaa 3480
187 ccaccgctgg tagcggtagt ttttttgttt gcaagcagca gattacgcgc agaaaaaag 3540
188 gatctcaaga agatcctttg atcttttcta cggggtctga cgctcagtgg aacgaaaact 3600
189 cacgttaagg gattttggtc atgagattat caaaaaggat cttcacctag atccttttaa 3660
190 attaaaaatg aagttttaaa tcaatctaaa gtatatatga gtaaacttgg tctgacagtt 3720
191 accaatgctt aatcagttag gcacctatct cagcgatctg tctatttcgt tcatccatag 3780
192 ttgcctgact ccccgctgtg tagataacta cgatacggga gggcttacca tctggcccca 3840
193 gtgctgcaat gataccgcga gaccacgct caccggctcc agatttatca gcaataaacc 3900
194 agccagccgg aagggccgag cgcagaagtg gtccgtcaac tttatccgcc tccatccagt 3960
195 ctattaattg ttgccgggaa gctagagtaa gtagttcgcc agttaatagt ttgcgcaacg 4020
196 ttgttgccat tgctacaggc atcgtggtgt cacgctcgtc gtttggtatg gcttcattca 4080
197 gctccggttc ccaacgatca aggcgagtta catgatcccc catgttgtgc aaaaaagcgg 4140
198 ttagctcctt cgttcctccg atcgttgtca gaagtaagtt ggccgcagtg ttatcactca 4200
199 tggttatggc agcactgcatt aattctctta ctgtcatgcc atccgtaaga tgcttttctg 4260
200 tgactggtga gtactcaacc aagtcattct gagaatagt tatgcggcga ccgagttgct 4320
201 ctgcccggc gtcaatacgg gataataccg cgccacatag cagaacttta aaagtgtca 4380
202 tcattggaaa acgttcttcg gggcgaaaaa tctcaaggat cttaccgctg ttgagatcca 4440
203 gttcgatgta acccactcgt gcacccaact gatcttcagc atcttttact ttcaccagcg 4500
204 tttctgggtg agcaaaaaa ggaaggcaaa atgccgcaaa aaagggaata agggcgacac 4560
205 ggaaatgttg aataactcata ctcttctttt ttcaatatta ttgaagcatt tatcagggtt 4620
206 attgtctcat gagcggatag atatttgaat gtatttagaa aaataaaca ataggggttc 4680
207 cgcgcacatt tccccgaaa gtgc 4704
209 <210> SEQ ID NO: 5
210 <211> LENGTH: 29
211 <212> TYPE: DNA
212 <213> ORGANISM: Artificial Sequence
214 <220> FEATURE:

```

RAW SEQUENCE LISTING

DATE: 04/23/2002

PATENT APPLICATION: US/09/932,328

TIME: 15:37:11

Input Set : A:\50665-8009.US01-SEQLIST.TXT

Output Set: N:\CRF3\04232002\I932328.raw

```

215 <223> OTHER INFORMATION: primer
217 <400> SEQUENCE: 5
218 aacaatactg gaattcgaga agtaaaaag 29
220 <210> SEQ ID NO: 6
221 <211> LENGTH: 22
222 <212> TYPE: DNA
223 <213> ORGANISM: Artificial Sequence
225 <220> FEATURE:
226 <223> OTHER INFORMATION: primer
228 <400> SEQUENCE: 6
229 ctacgcaacc cgggagaaaa tc 22
231 <210> SEQ ID NO: 7
232 <211> LENGTH: 23
233 <212> TYPE: DNA
234 <213> ORGANISM: Artificial Sequence
236 <220> FEATURE:
237 <223> OTHER INFORMATION: primer
239 <400> SEQUENCE: 7
240 gacttaactt tagtcatatt tag 23
242 <210> SEQ ID NO: 8
243 <211> LENGTH: 22
244 <212> TYPE: DNA
245 <213> ORGANISM: Artificial Sequence
247 <220> FEATURE:
248 <223> OTHER INFORMATION: primer
250 <400> SEQUENCE: 8
251 ttcgctcttg ctgctgctca ct 22
253 <210> SEQ ID NO: 9
254 <211> LENGTH: 49
255 <212> TYPE: DNA
256 <213> ORGANISM: Artificial Sequence
258 <220> FEATURE:
259 <223> OTHER INFORMATION: primer
261 <400> SEQUENCE: 9
262 gcagtctaga actagtagat ctcggggggc aacgaaatat gaaaaagcc 49
264 <210> SEQ ID NO: 10
265 <211> LENGTH: 49
266 <212> TYPE: DNA
267 <213> ORGANISM: Artificial Sequence
269 <220> FEATURE:
270 <223> OTHER INFORMATION: primer
272 <400> SEQUENCE: 10
273 ggctttttca tatttcgttg ccccccgaga tctactagtt ctagactgc 49
275 <210> SEQ ID NO: 11
276 <211> LENGTH: 47
277 <212> TYPE: DNA
278 <213> ORGANISM: Artificial Sequence
280 <220> FEATURE:
281 <223> OTHER INFORMATION: primer

```

VERIFICATION SUMMARY

DATE: 04/23/2002

PATENT APPLICATION: US/09/932,328

TIME: 15:37:12

Input Set : A:\50665-8009.US01-SEQLIST.TXT

Output Set: N:\CRF3\04232002\I932328.raw

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date